8053-GDM

#16

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No.: 08/479,077 Art Unit: 1209
Filed: July 6, 1995 Examiner: Lamkin
By: Garcia et al.
For: SQUARYLIUM COMPOUNDS, AND PROCESSES AND INTERMEDIATES FOR THE SYNTHESIS OF THESE COMPOUNDS

Cambridge, Massachusetts 02139
March 6, 2002

SUPPLEMENTAL APPENDIX TO APPEAL BRIEF

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

On October 29, 2001 the Patent and Trademark Office Board of Patent Appeals and Interferences issued an Order Remanding to Examiner in the above-identified appeal.

The Examiner, Ms. Lamkin, informed appellants' undersigned attorney in a telephone interview held on March 5, 2002 that the amendment filed October 27, 1997 (Paper No. 12) has been entered and considered without any change in the status of the claims on appeal.

Ms. Lamkin further stated that, in accordance with the Board's requirements, appellants must submit a Supplemental Appendix which reflects the amendments made in the claims. Accordingly, appellants submit herewith such a Supplemental Appendix.

Respectfully submitted,

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CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being facsimile transmitted to **Examiner Lamkin via facsimile no. 703-308-7922** on the date shown below.

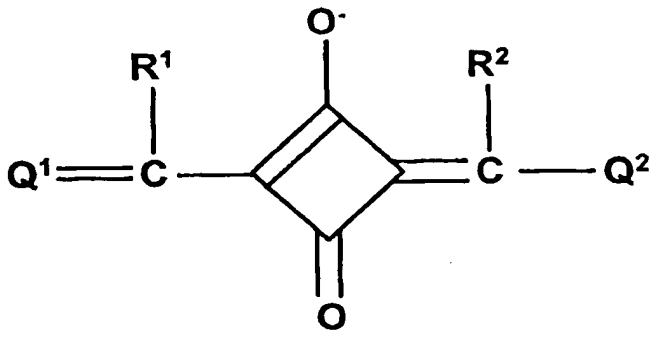
Date: March 6, 2002

Gaetano D. Maccarone
Registration No. 25,173

Supplemental Appendix

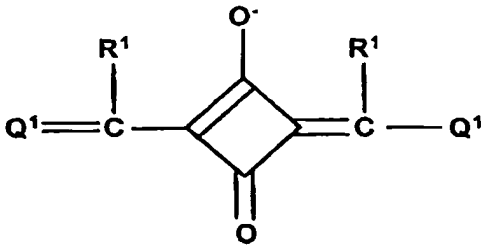
Claims on Appeal

15. A squarylium compound of the formula:

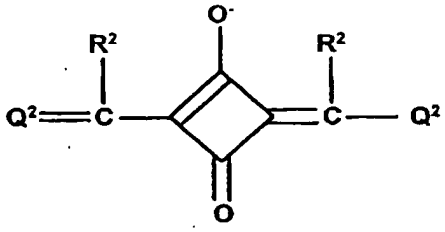


wherein Q^1 and Q^2 are each independently a pyrylium, thiopyrylium, selenopyrylium, benzpyrylium, benzthiopyrylium or benzselenopyrylium nucleus, and R^1 and R^2 are each independently a hydrogen atom or an aliphatic or cycloaliphatic group, the Q^1CR^1 grouping being different from the Q^2CR^2 grouping.

16. A squarylium compound according to claim 15 which is essentially free from squarylium compounds of the formulae:



and



17. A squarylium compound according to claim 16 wherein each of Q^1 and Q^2 is a 4-pyrylium, 4-thiopyrylium, 4-selenopyrylium, 4-benzpyrylium, 4-benzthiopyrylium or 4-benzselenopyrylium nucleus.

18. A squarylium compound according to claim 17 wherein at least one of Q^1 and Q^2 is a 2,6-dialkylpyrylium, -thiopyrylium or -selenopyrylium nucleus, in which each of the alkyl groups contains not more than about 8 carbon atoms.

19. A squarylium compound according to claim 18 wherein at least one of Q^1 and Q^2 is a 2,6-di-tertiary butylpyrylium, -thiopyrylium or -selenopyrylium nucleus.

20. A squarylium compound according to claim 17 wherein one of Q^1 and Q^2 is a 2-phenyl benzpyrylium, benzthiopyrylium or benzselenopyrylium nucleus and the other is (a) a 2-substituted benzpyrylium, benzthiopyrylium or benzselenopyrylium nucleus, in which the 2-substituent is an alkyl, alkenyl, alkynyl or alkicyclic group, or (b) a 2,6-dialkyl-pyrylium, -thiopyrylium or -selenopyrylium nucleus.

21. A squarylium compound according to claim 20 wherein the 2-phenyl group has an *ortho* alkoxy or cycloalkoxy substituent.

22. A squarylium compound according to claim 17 wherein one of Q^1 and Q^2 is a benzpyrylium, benzthiopyrylium or benzselenopyrylium nucleus bearing at its 7-position an $-N[(CH_2)_3-]_2$ grouping in which the ends of the trimethylene groups remote from the nitrogen atom are joined to the 6- and 8-positions of the nucleus, so that the $-N[-(CH_2)_3-]_2$ grouping and the phenyl ring of the nucleus together form a julolidine ring system, and the other is (a) a 2-substituted benzpyrylium, benzthiopyrylium or benzselenopyrylium nucleus, in which the 2-substituent is an alkyl, alkenyl, alkynyl or alicyclic group, or (b) a 2,6-dialkyl-pyrylium, -thiopyrylium or -selenopyrylium nucleus.

23. A squarylium compound according to claim 17 wherein at least one of Q^1 and Q^2 is a benzpyrylium, benzthiopyrylium or benzselenopyrylium nucleus bearing at its 6-position an alkoxy or cycloalkoxy group.

24. A squarylium compound according to claim 15 in which:

(a) Q^1 is a 2,6-bis(l,1-dimethylethyl)-4-pyrylidene grouping, Q^2 is a 2,6-bis(1,1-dimethylethyl)-4-thiopyrylium grouping, and R^1 and R^2 are each a hydrogen atom, namely [4-[[3-2,6-bis(1,1-dimethylethyl)-(4H-pyran-4-ylidene)-methyl]-2-hydroxy-4-oxo-2-cyclobuten- 1 -ylidene]methyl]-2,6-bis(1,1-dimethyl-ethyl)thiopyrylium hydroxide inner salt;

(b) Q^1 is a 2,6-bis(1,1-dimethylethyl)-4-pyrylidene grouping, Q2 is a 2,6-bis(1,1-dimethylethyl)-4-selenopyrylium grouping, and R^1 and R^2 are each a hydrogen atom, namely [4-[[3-2,6-bis(1,1-dimethylethyl)-(4H-pyran-4-ylidene)methyl] -2-hydroxy-4-oxo-2-cyclobuten-1-ylidene]methyl]-2,6-bis(1,1-dimethylethyl)-selenopyrylium hydroxide inner salt;

(c) Q^1 is a 7-diethylamino-2-(1,1-dimethylethyl)benz[b]-4H-pyran-4-ylidene grouping, Q^2 is a 7-diethylamino-2-phenylbenzpyrylium grouping, and R^1 and R^2 are each a hydrogen atom, namely 4-[3-[[7-diethylamino-2-(1,1-dimethyl-ethyl)benz[b]-4H-pyran-4-ylidene]methyl]-2-hydroxy-4-oxo-2-cyclobuten-1-ylidene] methyl]7-diethylamino-2-phenylbenzpyrylium hydroxide inner salt dye;

(d) Q^1 is a 2,6-bis[l,1-dimethylethyl]-4-selenopyrylidene grouping, Q^2 is a 2-[2-trifluoromethylphenyl]benz[b]pyrylium grouping, and $R^1$and R^2 are each a hydrogen atom, namely 4-[[3-[2,6-bis[1,1-dimethylethyl]-[4H-selenopyran-4-ylidene]methyl]-2-hydroxy-4-oxo-2-cyclobuten-l -ylidene]methyl]-2-[2-trifluoromethylphenyl]benz[b]pyrylium hydroxide inner salt dye;

(e) Q^1 is a 6-[but-2-oxy]-2-[1,1-dimethylethyl]benz[b]-4H-pyran-4-ylidene grouping, Q^2 is a 6-[2-ethylbut-1-oxy]-2-phenylbenzpyrylium grouping, and R^1 and R^2 are each a hydrogen atom, namely 4-[[3-[[6-[but-2-oxy]-2-[1,1-dimethylethyl]benz[b]-4H-pyran-4-ylidene] methyl]-2-hydroxy-4-oxo-2-cyclobuten-1-ylidene]methyl]-6-[2-ethylbut-1-oxy]-2-phenylbenzpyrylium hydroxide inner salt dye; and

(f) Q^1 is a 2,6-bis[1,1-dimethylethyl]-4-thiopyrylidene grouping, Q^2 is a 2,6-bis[2,4-dimethylphenyl]pyrylium grouping, and R^1 and R2 are each a hydrogen atom, namely 4-[[3-[2,6-bis[l,l-dimethylethyl]-[4H-thiopyran-4-ylidene]-methyl]-2-hydroxy-4-oxo-2-cyclobuten-1-ylidene]methyl]-2,6-bis[2,4 dimethylphenyl]pyrylium hydroxide inner salt dye.